

## 527 CMR: BOARD OF FIRE PREVENTION REGULATIONS

## 527 CMR 2.00 THE MANUFACTURING, STORAGE, TRANSPORTATION AND USE OF FIREWORKS

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2.01: Purpose and Scope

(1) The purpose of 527 CMR 2.00 is to provide minimum standards for the safe use of fireworks and special effects by competent operators, and the keeping, manufacturing, storage and intrastate transport of fireworks and pyrotechnic materials.

(2) 527 CMR 2.00 shall apply to supervised displays of fireworks; theatrical special effects, special effects before a proximate audience; the keeping, storage, manufacture, and intrastate transport of fireworks; permitting of fireworks displays; use of special effects; certificates of competency to conduct supervised fireworks displays or special effects; fireworks classified in accordance with the U.S. Department of Transportation (DOT) 49 Code of Federal Regulations (CFR) 173; display fireworks, also known as “1.1G, 1.3G” and “1.4G”; any combustible or explosive composition or substance, or any combination of the same, or any other article which was prepared for the purpose of producing a visible or audible effect by combustion, explosion, deflagration or detonation.

(3) 527 CMR 2.00 shall not apply to the following:

- (a) Explosives regulated by 527 CMR 13.00,
- (b) Model Rocketry regulated by 527 CMR 16.00,
- (c) Cannon or Mortar Firing regulated by 527 CMR 22.00,
- (d) Any of the items expressly prohibited or allowed under M.G.L c. 148, § 39, except as provided in 527 CMR 2.09(10).
- (e) Interstate transportation of fireworks.

2.02: NFPA Standards No.1123, 1124, and 1126 Are Incorporated by Reference

(1) For the purposes of 527 CMR 2.00 the provisions of NFPA Standards No. 1123, (2010 Edition); No. 1124, (2006 Edition); No. 1126, (2006 Edition), are hereby incorporated by reference with the following exceptions:

- (a) Where any conflict occurs between the standards adopted and 527 CMR 2.00, 527 CMR 2.00 shall prevail.
- (b) The definitions provided in referenced standards shall be modified as provided in 527 CMR 2.03.
- (c) The following sections of NFPA 1124 shall not apply:
  - 1. Chapter 6
  - 2. Chapter 7

2.03: Definitions

As used in 527 CMR 2.00, the following definitions shall have the meanings respectively assigned to them:

Approved. Approved by the State Fire Marshal.

Authority Having Jurisdiction. The Marshal or head of the fire department.

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Barrier. Material of substantial strength, uniformly supported and providing an uninterrupted barrier both vertically and horizontally and of a height of no less than 40 inches. Such barrier shall clearly define the restricted discharge area behind which the audience shall be located.

Board. The Board of Fire Prevention Regulations established under M.G.L. c. 22, § 14.

Certificate of Competency (Fireworks Display). A license granted by the Marshal to an individual which allows this person to be in charge of and responsible for the loading and firing of a Supervised Fireworks Display.

Certificate of Competency (Special Effects). A license granted by the Marshal to an individual which allows said person to be in charge of and responsible for the loading and firing of special effects.

CFR. Code of Federal Regulations.

Competent Operator (Fireworks). The person holding a Certificate of Competency and named on the Permit to Display Fireworks with overall responsibility for the safety, set up, and discharge of an outdoor fireworks display.

Competent Operator (Special Effects). The person holding a Certificate of Competency and named on the Permit to Display Special Effects with overall responsibility for the safety, set up, and discharge of special effects.

Dense Pack Portable Firing Trailer (PFT). A trailer with single shot mortars that are securely braced with a metal framework for firing aerial shells electrically, as approved by the Marshal.

DOT. United States Department of Transportation.

Explosive. As defined by 527 CMR 13.00: *Explosives*.

Explosive Composition. Any Chemical compound or mixture the primary or common purpose of which is to function by explosion.

Explosive Material. As defined by 527 CMR 13.00: *Explosives*.

Fireworks. Any material, composition or device for the purposes of producing a visible or an audible effect for entertainment purposes by combustion, deflagration, or detonation that meets the definition of “Consumer Fireworks” or “Display Fireworks as set forth in 527 CMR 2.00.

Exception No. 1: Model rockets and model rocket motors designed, sold, and used for the purpose of propelling recoverable aero models are not considered to be fireworks. (See 527 CMR 16.00: *Model Rockets*)

(a) Consumer Fireworks. As defined by NFPA 1123 (2010 Edition).

(b) Display Fireworks. Explosive devices intended for use in outdoor fireworks displays that are presented in conformance with the provisions of 527 CMR 2.08(1). These devices are designed to produce visible or audible effects for entertainment purposes by combustion, deflagration, or detonation. The term “display fireworks,” as used in 527 CMR 2.00, includes consumer fireworks to be used in fireworks displays; larger devices of similar construction and chemical composition that are classed as explosives, 1.3G and described as Fireworks, UN0335 by the U.S. Department of Transportation; and other devices that produce visible or audible effects for entertainment purposes that are classed as explosives 1.1G, 1.3G, 1.4G or 1.4S and described as Article, Pyrotechnic by the U.S. Department of Transportation.

(c) Special Effects Fireworks (Pyrotechnic Fireworks). Explosive devices or articles containing any pyrotechnic composition manufactured and assembled, designed, intended for use discharge in conformance with the provisions of 527 CMR 2.08(2), in connection with television, theater, motion picture productions, or demonstration which may or may not be presented before live audiences, and any other articles containing any pyrotechnic composition used for education, recreation or entertainment purposes which may or may not be presented before a live audience.

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(d) Novelties and Trick Noisemakers. Small devices containing limited amounts of pyrotechnic explosive or composition that produce a visible or audible effect.

Exception No.1: Toy caps for use in toy pistols, toy canes or toy guns, and novelties and trick noisemakers as enumerated in D.3.3 of NFPA 1123 (2010 Edition) are not considered to be fireworks.

Fireworks User's Certificate. A license granted by the Marshal under the provisions of 527 CMR 2.04(2), which allows a person or firm to use fireworks.

Harbor Master. An individual appointed under the provisions of M.G.L. c. 102, § 19.

Hazardous Debris. Any debris produced or expelled by the functioning of a pyrotechnic device that is capable of causing personal injury or unpredicted property damage. This includes, but is not limited to, hot sparks, heavy casing fragments, unignited components. Confetti, lightweight foam pieces, feathers, novelties, etc. are not to be construed as hazardous debris.

Head of the Fire Department. An individual as defined in M.G.L. c. 148, § 1.

Highway. Any way as defined by M.G.L. c. 90, § 1.

Igniter. An electrical, chemical, or mechanical device normally used to fire pyrotechnics.

Ingredient. A chemical used to create a pyrotechnic material. Such a chemical is not a pyrotechnic by itself.

Intrastate. Commerce within the state, as opposed to commerce between the states (*i.e.* interstate).

Manufacturer of Fireworks. Any person licensed in accordance with 27 CFR Part 55, and engaged in the business of manufacturing fireworks for the purpose of sale or distribution.

Exception No. 1: In the case of binary systems, the supplier of pre-weighted or pre-measured ingredients, not the person mixing the ingredients, is considered the manufacturer of any pyrotechnic materials created from binary components.

Exception No. 2: The person loading binary materials into devices supplied by the manufacturer of binary systems shall not be considered a manufacturer when such loading is preformed according to the instructions of the manufacturer.

NOTE: A federal manufacturer license is required when a binary system is used and the components are mixed in the course of a trade or business to create an explosive material.

Marshal. The State Fire Marshal as defined in M.G.L. c. 148, § 1.

Massachusetts Requirement. A requirement of 527 CMR 2.00. When specifically stated within 527 CMR 2.00 it is a requirement of 527 CMR 2.00 and shall prevail over the provisions of any adopted standard.

NFPA. The National Fire Protection Association.

NFPA 70. 527 CMR 12.00: *Massachusetts Electrical Code*.

Performer. Any person active in the performance during which a pyrotechnic special effect occurs who is not audience or support personnel. Among others, performers can include, but are not limited to, actors, singers, musicians, acrobats, and the like.

Permit to Display Fireworks. A permit issued, in writing on forms furnished by the Department of Fire Services, to a Competent Operator by the head of the fire department or the Marshal to conduct a Supervised Fireworks Display or Special Effects before a Proximate Audience.

Proscenium Wall. A fire resistive wall, including fire resistive curtain, which separates a stage or enclosed platform from the public or spectator area of an auditorium or theater as defined in 780 CMR: *Types of Construction* (The State Building Code).

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Production. All the performances of a musical, dramatic, operatic, or other series of shows. There are two types of productions: fixed and touring.

Proximate Audience. An audience closer to pyrotechnic devices than allowed by 527 CMR 2.08. Fireworks Display Outdoors.

Sponsor. The organization (person, group, or government agency) that arranges with a duly authorized fireworks supplier for its services in presenting a fireworks display or in providing fireworks for use in a display.

Support Personnel. Any person who is not a performer or member of the audience. Among others, support personnel include the display crew of any production, stage hands, property masters, security guards, fire watch officers, janitors, or any other employee.

2.04: Certificates of Competency and Permits for Supervised Displays of Fireworks

(1) Certificate of Competency (Fireworks Display). No person shall conduct a Fireworks Display unless they possess a Certificate of Competency (Fireworks Display) granted by the Marshal.

(a) any person desiring a Certificate of Competency shall make application in writing to the Marshal, be 21 years of age or older, and shall submit to such examination and test as the Marshal shall prescribe. Upon payment of the required fee, the certificate, when issued, shall remain in effect for a period of two years unless suspended or revoked by the Marshal.

1. The applicant shall pass a comprehensive written examination covering state laws, regulations and industry safety standards pertaining to the display of fireworks and 527 CMR 2.00.

2. The applicant shall provide evidence of active employment for a period of three years, on the crew for professional fireworks displays, to encompass a minimum of ten displays.

3. The applicant shall have at least two letters of reference from other licensed pyrotechnic operators within the state. At the option of the Marshal, an alternate requirement can be substituted.

4. The applicant shall provide evidence of having satisfactorily completed a recognized fireworks safety course, subject to review by the Marshal, during the past 12 months.

(b) The renewal of a Certificate of Competency (Fireworks Display) shall require:

1. Effective September 2, 2003, the holder shall pass a re-examination covering state laws, regulations and industry safety standards pertaining to the display of fireworks or special effects, as the case may be.

2. Proof of actively participating in at least two displays during the prior two years.

3. The applicant shall provide evidence of having satisfactorily completed a recognized fireworks safety course, approved by the Marshal, during the past 12 months.

4. A notarized statement attesting that the person or firm understands the contents of 527 CMR 2.00 and M.G.L. c. 148. The statement shall be made part of the application.

(2) (a) Any applicant for a Certificate of Competency to conduct Special Effect or Pyrotechnic Display Before a Proximate Audience shall, when fulfilling the requirements in 527 CMR 2.04(1)(a) and (b), provide evidence of knowledge and experience particular to the profession of conducting special effects displays. Such evidence shall include written documentation that the applicant has worked in at least ten special effects performances within two years from the date of application under the direct supervision of a person who possesses a valid certificate of competency for such special effects issued by the Commonwealth or such similar certificate issued by another state.

(b) Any person who possess a valid certificate of competency for Special Effects as of the effective date of 527 CMR 2.04(1), shall, as a condition to maintaining the continued validity of said certificate, submit to a re-examination, by the Marshal, of said individuals ability to conduct such displays in accordance with state law, regulation and industry safety standards. Any certificate, issued to a holder who has not taken and passed such a re-examination by May 7, 2003, shall be deemed null and void.

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(c) The issuance of a Certificate of Competency for Special Effects shall not authorize the holder to conduct other types of fireworks displays. The issuance of a Certificate of Competency to conduct outdoor, marine or supervised displays of fireworks shall not authorize the holder to conduct Special Effects displays.

(3) Fireworks Users Certificate. No person or firm shall use fireworks, on or after June 1, 2001 unless they possess a Fireworks Users Certificate granted by the Marshal.

(a) Application for a Fireworks Users Certificate shall be made to the Marshal and shall include the following:

1. Evidence of a valid bond in accordance with M. G. L. c. 148, § 42.
2. A notarized statement indicating that fireworks materials shall be transported, stored and handled or used in accordance with 527 CMR 2.00.
3. A notarized statement attesting the person or firm understands the contents of 527 CMR 2.00 and M.G.L. c. 148. The statement shall be made a part of the application.

(b) The Fireworks Users Certificate shall expire upon the expiration of the bond. The Fireworks Users Certificate may be revoked by the Marshal for a failure by the holder of the User's Certificate or his agents to comply with the terms of the User's Certificate or any provision of 527 CMR 2.00, or M.G.L. c. 148.

(4) Permit to Display Fireworks (Supervised Display of Fireworks). No person or firm shall detonate or use fireworks unless they possess a Permit to Display Fireworks obtained from the head of the fire department in the city or town where the Fireworks are to be displayed, or the Marshal in all other jurisdictions.

(a) Application for a Permit to Display Fireworks shall be made by a competent operator(s) and shall be in writing on forms furnished by the Department of Fire Services.

(b) Application shall be made in writing to the head of the fire department in the city or town where the Fireworks are to be displayed, or the Marshal in all other jurisdictions, at least 20 days in advance of the display.

(c) Such application shall set forth:

1. The name, address, and phone number of the person, group, or organization sponsoring the fireworks display, hereinafter known as the sponsor.
2. The date and time of day at which the fireworks display is to be held, with a proposed rain/wind date and time in the event the display is postponed.
3. The exact address of the display.
4. A diagram of the site on which the display is to be held showing the point(s) at which the fireworks are to be discharged, the location of the audience, as applicable, all buildings, highways and other lines of communication, the lines behind which the audience is to be restrained or separated, and the location of other possible overhead obstructions such as nearby trees, telephone or telegraph lines.
5. The name, address, and phone number of the supplier of the fireworks to the operator, if different than that of the operator.
6. The name and home address of the competent operator who is to be responsible for the actual discharge of the fireworks constituting the display. In the event that the above named operator is unable to be present, an approved competent operator may be substituted. The head of the fire department shall notify the Marshal of such substitution within two working days following the display.
7. The approximate number and description of the fireworks to be discharged, the number and diameter of the largest shells, and whether manually or electrically fired.
8. The manner and place of storage of such fireworks prior to delivery to the fireworks display site.
9. A copy of any required Federal Aviation Administration clearance.
10. A copy of any required U.S. Coast Guard marine event permit.
11. Upon receipt of such application, the head of the fire department shall make or cause to be made an investigation of the pertinent facts set forth in the application and a physical inspection of the display grounds for the purpose of determining compliance with the provisions of 527 CMR 2.00. Upon completion of such investigation and inspection but no later than five days after receipt of said application, the head of the fire department shall transmit one copy of said application to the Marshal and one copy to the applicant with his endorsement thereon in compliance with provisions of law, or his reason or reasons for withholding such endorsement.

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- (d) Said Permit to Display Fireworks shall not be issued until the applicant (person):
  - 1. Exhibits a valid Certificate of Competency (Fireworks Display). The holder of the certificate shall be of such character acceptable to the head of the fire department in the city or town where the fireworks are to be displayed, or the Marshal in all other jurisdictions or their designees.
  - 2. Provides a complete written application particularly describing the operation of the display, the material to be used, the layout, fireworks storage, method and routes of delivery and any further information requested that may assure the display shall not be hazardous to property or endanger any person or persons.
  - 3. Provides a copy of a valid Fireworks User's Certificate.
  - 4. Provides a letter from the owner, operator or manager of the entertainment venue or theatre (as defined by 527 CMR 2.09(3)) acknowledging the proposed use of pyrotechnics within their facility.
- (e) A permit to Display Fireworks (Supervised Display of Fireworks) shall list the name of the sponsor and the person holding the Certificate of Competency (Fireworks Display) who shall be responsible for the display.
- (f) A valid Permit to Display Fireworks (Supervised Display of Fireworks) and a Certificate of Competency (Fireworks Display) shall be in possession of the operator at the display site and shall be produced for inspection, in hand, when requested by the head of the fire department, the Marshal, or their designees.
- (g) The head of the fire department or the Marshal may restrict the terms and conditions of a Permit to Display Fireworks (Supervised Display of Fireworks) if hazards to the safety of the public, not covered by 527 CMR 2.00 are identified, reduced to writing and made a part of the permit.
- (h) A Permit to Display Fireworks (Supervised Display of Fireworks) may be suspended or revoked by the head of the fire department or the Marshal or their designees for any violation of 527 CMR 2.00, or M.G.L. c. 148.

2.05: Manufacture of Fireworks

- (1) NFPA No. 1124 (2006 Edition) Standard Is Incorporated by Reference.
- (2) Massachusetts Requirements. 527 CMR 2.05(3) through (5) are requirements in addition to the incorporated standards.
- (3) No person shall manufacture fireworks except in accordance with 527 CMR 2.00. The manufacture of any fireworks, as defined in 527 CMR 2.03, shall be prohibited unless it is authorized by federal license, or permit, and a license issued by the local licensing authority and a permit issued by the Marshal and is conducted in accordance with 527 CMR 2.00.
  - (a) An application for the permit to manufacture fireworks, as required by M.G.L. c. 148, § 13, shall be accompanied by an attested or photostatic copy of the license granted by the local licensing authorities under M.G.L. c. 148, § 12, and by a plan drawn to scale showing the arrangement of the various buildings and magazines of the manufactory and the egress therefrom, their relative location to other buildings and property lines, shall clearly indicate:
    - 1. The location of the manufactory.
    - 2. The name of the owner and/or occupant.
    - 3. The kind and maximum quantities of the explosives, raw materials and finished products, and the manner in which they are to be kept or stored.
    - 4. The nature of the work to be carried on in each building.
  - (b) Licenses or permits shall not be assigned or transferred.
  - (c) The issuing authority shall be notified immediately of any change of business address.
- (4) A fire safety analysis shall be required. A registered fire protection engineer shall conduct such analysis.
- (5) The Marshal reserves the right to set additional restrictions and requirements as a condition of the permit to manufacture fireworks.

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2.06: Transportation of Fireworks

(1) NFPA Standards No. 1123 (2010 Edition) and 1124 (2006 Edition) Are Incorporated by Reference.

(2) Massachusetts Requirements. 527 CMR 2.06(3) through (4) are requirements in addition to the incorporated standards.

(3) Permit Requirements. A permit shall be required for the transportation of fireworks or pyrotechnic material intrastate. Application for this permit shall be made to the Marshal.

(a) Any vehicle used for the transportation of fireworks shall be so constructed that the fireworks shall be totally enclosed at all times and such enclosure shall be protected by a suitable lock.

(b) Fireworks shall not be carried or transported in or upon a public conveyance or a vehicle carrying passengers for hire

(c) At no time shall any vehicle containing fireworks be left unattended.

Exception: See section 5-4.1.3 of NFPA 1124

(d) Every vehicle containing fireworks shall display on both sides and on the front and rear thereof the appropriate DOT required placards, and each vehicle shall bear the owners name on each side thereof.

(e) Each vehicle shall be equipped with at least two 2A, 10-BC portable fire extinguishers.

(f) No person shall smoke, carry matches or any other flame producing device, or carry unauthorized firearms or cartridges while transporting fireworks. Road flares for use in manual ignition of fireworks may be carried provided they are properly separated from any fireworks cargo.

(g) Fireworks shall not be transported through any prohibited vehicular tunnel or subway or over any prohibited bridge, roadway, or elevated highway.

(h) No person shall drive, load, or unload a motor vehicle transporting explosive materials in a careless or reckless manner.

(i) No person under the age of 21 shall transport or possess fireworks regulated by 527 CMR 2.00

(j) In the event of a breakdown or collision, the head of the fire department and the police authority having jurisdiction shall be promptly notified.

1. Fireworks shall be transferred from the disabled vehicle to another under the supervision of a person qualified by the owner of the fireworks or at the direction of a police officer, fire officer or the Marshal.

2. Motor vehicles transporting fireworks shall not be towed while containing fireworks unless directed by a police officer, the head of the fire department, the Marshal or his designees.

3. Road Flares shall not be used for traffic warning devices.

(4) Delivery of Fireworks.

(a) Delivery of fireworks shall be made only to authorized persons who are in possession of a valid Certificate of Competency (Fireworks Display) and a Permit to Display Fireworks (Supervised Display of Fireworks).

(b) As soon as the fireworks have been delivered to a display site, they shall not be left unattended, and they shall be kept dry.

(c) Upon delivery of the fireworks to the display site, members of the public, the audience, spectators, and other persons not otherwise authorized by the head of the fire department or the Marshal, shall be kept at a distance not less than those specified in NFPA 1123 Table 5.1.3.1. Minimum Separation Distances Mortars to Spectators for Land or Water Displays.

Exception: Where it is impractical to locate the delivery vehicle within the perimeter of the display site the vehicle shall be parked and secured. The minimum secured radius from any point of transfer of fireworks from the vehicle to the display site shall be 150 feet. Audience members, spectators and the general public shall not be allowed within this area.

2.07: Storage of Fireworks, Pyrotechnic and Explosive Compositions

(1) NFPA No. 1124 (2006 Edition) Is Incorporated by Reference.

(2) Massachusetts Requirements. 527 CMR 2.07(4) through (5) are requirements in addition to the incorporated standards.

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(3) Storage of. Fireworks in excess of 30 days shall be in accordance with the provisions of 527 CMR 2.07 and the incorporated standard.

(a) A license shall be required from the local licensing authority

(b) In addition to the local requirements required by 527 CMR 2.07(3)(a), as of January 1, 2003, no magazine, building or structure shall be used for the manufacturing or storage of fireworks without a permit issued by the Marshal in accordance with the provisions of M.G.L. c. 148, § 12.

1. Permits for manufacture of fireworks shall be obtained from the Marshal in accordance with 527 CMR 2.05.

2. Permits for the storage of fireworks in any magazine, building or structure shall be obtained from the marshal by the owner of said magazine, building, or structure. The application for said permit shall contain the location of the subject magazine building or structure, the nature and quantity of fireworks to be stored, and the capacity and specifications of the storage and any other information as prescribed by the Marshal in said application.

3. No permit or renewal thereof shall be issued by the Marshal under 527 CMR 2.07(3)(b) until the owner of said magazine, building or structure provides proof that the owner has met all requirements required by State and Federal law or regulation.

4. The Marshal may suspend or revoke a permit issued under 527 CMR 2.07(3)(b) if the marshal has reason to believe that the permit holder has violated the provisions of 527 CMR 2.00, or any law or other regulation related thereto.

5. Any person who has applied for or has been issued such a permit or a renewal thereof by the marshal, under 527 CMR 2.07(3)(b), shall be deemed to have consented to periodic administrative inspections by the Marshal or his designees of any building, structure, magazine or facility used to store or manufacture such fireworks and all records relating thereto.

6. Any owner who has been issued a permit under 527 CMR 2.07(3)(b) shall notify the Marshal immediately of the sale or transfer of a magazine, building or structure. The owner shall remove the permit number from the magazine, building or structure upon sale or transfer. The transferee shall immediately apply for a new permit for the magazine, building or structure in accordance with 527 CMR 2.07(3)(b).

(4) No person shall keep or store fireworks, pyrotechnics and explosive compositions or materials except in accordance with 527 CMR 2.00.

(a) All fireworks, pyrotechnics and explosive compositions or materials and devices not stored in magazines shall remain in their prescribed U.S. Department of Transportation containers until it becomes necessary to set them up for a performance. Unless the pyrotechnic special effect devices are secured or inaccessible, they shall be supervised.

Exception: Unless pyrotechnic special effects are located in an inaccessible, secured or supervised location.

(b) All buildings where fireworks are manufactured, kept or stored shall be open to inspection by the State Fire Marshal or the head of the fire department or their designees.

(5) Temporary Storage.

(a) Except as otherwise provided by M.G.L. c. 148, § 40, 527 CMR 2.00 and 527 CMR 13.00: *Explosives*, fireworks and pyrotechnic material may be temporarily kept or stored in a building or part thereof in quantities not to exceed 2000 lbs., provided that the building or part thereof is not open to access by the public, and is kept secure from the public, and/or is guarded under such conditions as required by the head of the fire department.

1. Fireworks kept in excess of 2,000 lbs shall be kept or stored in a building located at a distance not less than 1000 feet from any other building under such conditions as required by the head of the fire department.

2. All fireworks kept or stored in a building shall be kept in wooden boxes with tightly closed covers or in approved DOT Shipping containers.

(b) All premises used for keeping or storing of fireworks shall be provided with such fire extinguishing equipment as may be required by the Marshal or head of the fire department.

(c) No smoking shall be allowed about the premises where fireworks are kept or stored, and notices to that effect shall be conspicuously posted on the premises.



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(d) Ready boxes may be utilized during a fireworks display provided that such ready boxes comply with the provisions of 527 CMR 2.08(3)(j).

(e) A permit from the head of the fire department or the Marshal shall be required for the storage of all fireworks, pyrotechnic or explosive compositions.

All such permits for the storage of fireworks shall remain in effect for a period of time as determined by the Marshal or the head of the fire department and may be suspended or revoked for cause by the head of the fire department or the Marshal. Such permits shall be obtained from the head of the fire department in the city or town where the fireworks are to be stored, or the Marshal in all other jurisdictions.

(f) The head of the fire department or the Marshal may authorize, by stating on a permit to Display Fireworks (Supervised Display of Fireworks) the temporary keeping or storing of Fireworks pursuant to the fireworks display authorized by the display permit.

2.08: Supervised Display of Fireworks Outdoors

(1) NFPA Standard No.1123 (2010 Edition) Is Incorporated by Reference.

(2) Massachusetts Requirements. 527 CMR 2.08(3) through (8) are requirements in addition to the incorporated standards. Annexes A, D, and E in NFPA 1123 (2010 Edition) shall be a requirement of 527 CMR 2.08.

(3) 527 CMR 2.08 shall specifically apply to fireworks displays outdoors. Any fireworks display that does not meet the requirements of a proximate audience shall be considered a fireworks display outdoors.

(a) Before the performance of any fireworks display outdoors in which fireworks are to be used a Permit to Display fireworks, as required by 527 CMR 2.04(3), shall be obtained. The permit applicant shall submit a plan describing the types, quantity and arrangement of the fireworks to be used to the head of the fire department. After a permit has been granted, the permit holder shall keep the plan available at the site for inspectors or other designated agents of the head of the fire department or the Marshal. Any performance adding fireworks different from the performance described in the permit holder's plan shall require approval by the head of the fire department.

(b) The audience at a supervised display of fireworks shall be restrained behind a suitable barrier such as snow fencing or its equivalent. Material of substantial strength, uniformly supported and providing an uninterrupted barrier both vertically and horizontally and of a height of no less than 40 inches shall be accepted as an equivalent. Such barrier shall clearly define the restricted discharge area. This restricted area shall be defined based on the minimum separation distances specified by NFPA 1123 (2010 Edition) Table 5.1.3.1.

(c) Natural barriers such as restrictive terrain, or bodies of water, may be utilized in conjunction with the requirements set forth in 527 CMR 2.08(3)(b), provided that prior approval has been obtained from the Marshal.

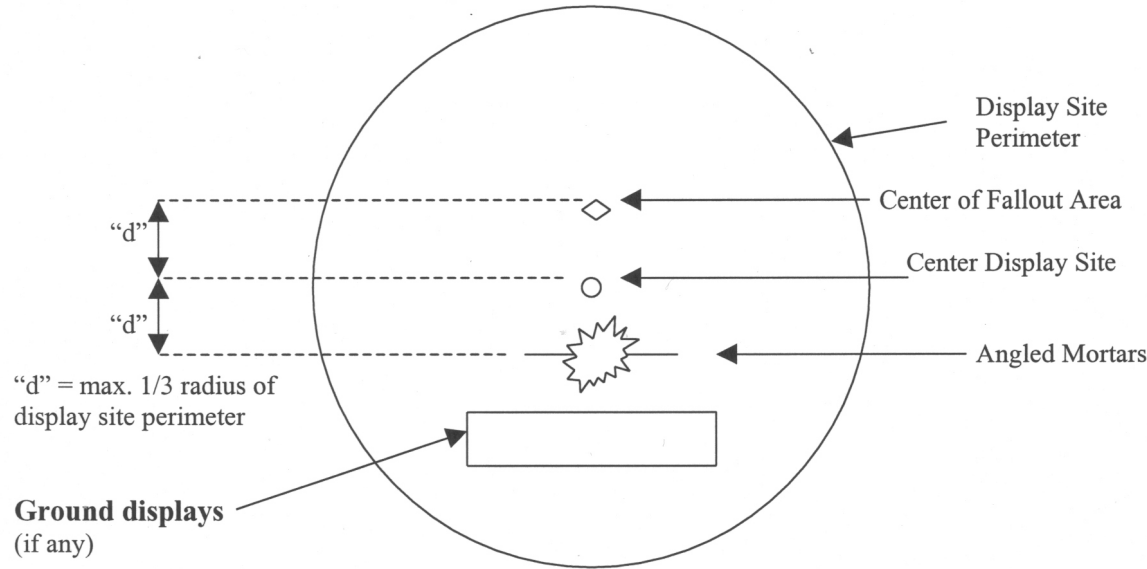
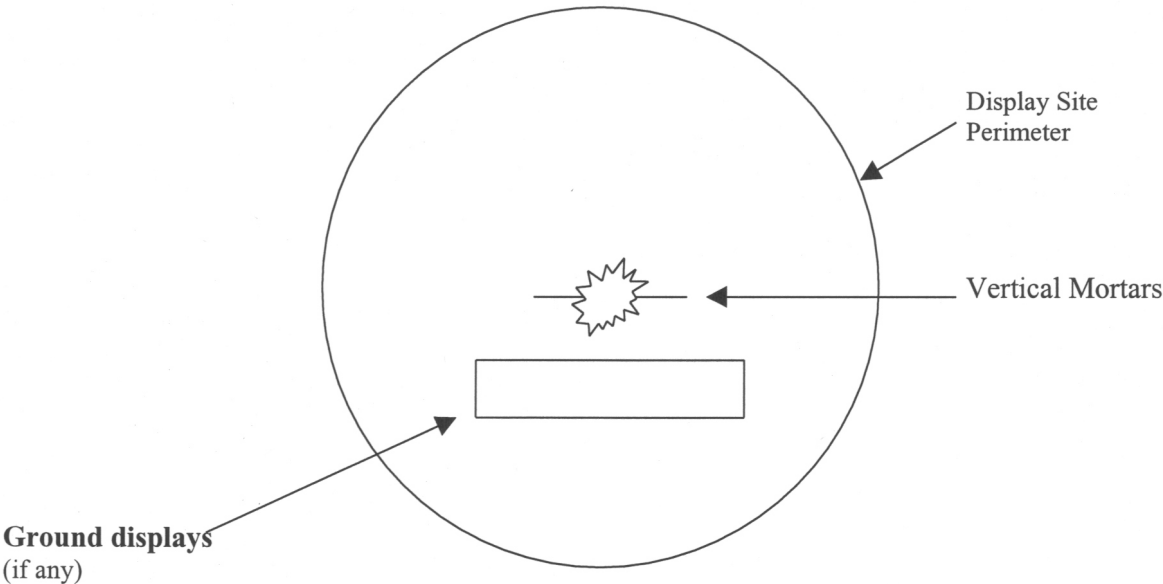
(d) Fireworks displays shall not be held during storms or inclement weather, when such weather conditions will interfere with the safe operation or discharge of the display. Fireworks displays shall not be held when the wind velocity exceeds 20 miles per hour at ground level. The operator shall have available for use at all times a portable anemometer or similar device for measuring wind velocity. Any supervised display of fireworks shall be stopped immediately in the event that upper level wind conditions cause the fall out area to change and pose a threat to public safety or property. A test shot shall be provided to check for high level winds at the request of the head of the fire department or the Marshal.

(e) It shall be the responsibility of the competent operator to determine that the area in which the display is to be discharged is safe and that 527 CMR 2.00 is complied with in all respects. The competent operator shall be responsible for all notifications to the F.A.A. or U.S. Coast Guard, or any other governmental agency with jurisdiction. The competent operator, the Marshal, or the head of the fire department may order the postponement of the display for any violation of 527 CMR 2.00.

(f) Support personnel and assistants shall operate under the direct supervision of a competent operator and shall be a minimum of 18 years of age.

2.08: continued

- (g) It shall be the responsibility of a competent operator to insure that a thorough search of the display area is made for any unignited fireworks or remnants thereof containing explosives. Such search shall be conducted forthwith and at the first available daylight following the display. Upon completion of the search, a competent operator shall report all findings to the head of the fire department in the municipality where the display was held. It shall be the responsibility of a competent operator to dispose of any such items found.
- (h) The head of the fire department shall designate the location and the type of fire extinguishing equipment as may be required.
- (i) The sponsor shall be responsible for the detailing of one or members of the fire department as may be required by the head of the fire department. They should be on duty from the time the fireworks are delivered to the site until the termination of the display and removal of all fireworks and debris from the site. For the purposes of 527 CMR 2.00 the word “debris” shall include any unignited fireworks or remnants thereof containing explosives.
- (j) Any explosion, fire or other accident occurring in connection with the keeping, storage, manufacture, handling, transportation, supervised display or other disposition of fireworks causing loss of life or injury to any person or damage to property shall be reported by the competent operator immediately to the Marshal, giving a detailed account of same and confirmed in writing.



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- (4) Fireworks Launch Mortars.
- (a) No fireworks display shall include mortars or shells in excess of 12 inches in diameter unless the competent operator shall have obtained prior written approval from the Marshal.
  - (b) Multiple shot mortar devices using mortars less than three inches in diameter such as cakes, repeaters, *etc.* shall be buried  $\frac{7}{8}$  of their length in a trench, mortar trough, or sturdy drum filled with clean sand or substantial wooden boxes. The head of the fire department may allow for an equivalent alternative, such as sandbags or racks constructed with material similar to mortar rack construction, provided the same degree of protection is provided.
  - (c) The use of aluminum mortars is prohibited.
  - (d) The provisions of Section 4.3.4 of NFPA 1123 are not applicable. Mortars shall not be reloaded.
- (5) Mortar Racks.
- (a) Spacing between mortars in a rack shall be at least  $\frac{1}{2}$  the diameter of the adjacent mortar.
  - (b) Each mortar shall be securely fastened to its rack, and each rack shall be securely supported at each end.
  - (c) Parallel racks or rows of racks shall be no less than two feet apart
    - 1. Exception # 1: For electrically fired displays parallel racks or rows of racks shall be separated by a minimum distance not less than twice the inside diameter of the largest mortar in an adjacent rack.
    - 2. Exception # 2: For manually fired "Finale" or "barrage" effect displays that utilize chain fusing, where the largest mortars are limited to four inches in diameter, parallel racks or rows of racks shall be separated by a minimum distance of not less than twice the inside diameter of the largest mortar in an adjacent rack.
- (6) Dense Pack Portable Firing Trailers.
- (a) Dense pack portable firing trailers shall be approved by the Marshal, subject to restrictions and inspections as established by the Marshal.
  - (b) Fireworks displays that utilize dense pack portable firing trailers shall be electrically fired.
  - (c) All dense pack portable firing trailers shall display a decal issued by the Marshal.
- (7) Remote Electrical Displays.
- (a) As of January 1, 2011, shells in excess of six inches shall be electrically fired.
  - (b) As of January 1, 2011, finales consisting of more than 50 shells shall be electrically fired.
  - (c) As of January 1, 2012 all supervised displays of fireworks shall be electrically fired.
  - (d) All electrical firing units shall display a decal issued by the Marshal, and all devices, wiring, connections, *etc.*, shall be adequately maintained and operated in accordance with the manufacturer's instructions.
- (8) Marine Displays.
- (a) 527 CMR 2.08(8) shall specifically apply to the use and display of fireworks, at a Marine Display.
  - (b) Before the performance of any Marine Display, a permit to Display Fireworks, as required by 527 CMR 2.04(3), shall be obtained. The permit applicant shall submit a plan describing the types, quantity, and arrangement of the fireworks to be used to the head of the fire department. After a permit has been granted, the permittee shall keep the plan available at the site for inspectors or other designated agents of the head of the fire department or the Marshal. Any display adding fireworks different from the display described in the permittee's plan shall require approval by the head of the fire department.
  - (c) All barges and vessels used as launch platforms for the supervised display of fireworks shall be open to inspection by the Marshal, head of the fire department, harbor master having jurisdiction, or to any person delegated by the aforementioned.
  - (d) All such barges or vessels shall be of sturdy, seaworthy construction, properly maintained, and provided with adequate towing, anchor, and mooring lines or chains. When a barge is secured at anchorage secondary mooring lines of equal value to the primary mooring lines shall be employed. Use of tugs or other vessels for securing a barge at anchor is forbidden. Exception: See 527 CMR 2.08(8)(a)

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## 2.08: continued

- (e) No barge or vessel used for the transportation of flammable, combustible or other hazardous material, above or below deck, shall be used unless such flammable, combustible or hazardous material, its residue and vapors have been removed and the barge or vessel is certified to be free of such vapors. This shall be accomplished by the use of a Marine Chemist who shall attest to this fact in writing.
- (f) All barges and vessels with decks of wooden construction shall have all exposed decking covered with a minimum of two inches of clean sand.
- (g) Any barge or vessel containing fireworks on any waters of the Commonwealth shall have signs affixed midship, visible on both sides thereof, the word "FIREWORKS" in six-inch-high red lettering on a white background. Further, such vessel shall display on a suitable staff an international Code Flag B, Which shall be readily discernible from a distance of not less than 1000 feet by day and shall be properly illuminated at night.
- (h) No personnel other than the competent operator (s), or authorized personnel as approved by the head of the fire department, shall be allowed on such barge during the display. A crew list indicating the full name and home addresses of each individual, and the purpose for which they shall be employed while aboard the barge shall be submitted to the head of the fire department prior to the display. The barge shall be equipped with a suitable means of shelter so as to provide sufficient protection to prevent debris from falling on the personnel, and shall provide protection from malfunctioning product.
- (i) No smoking shall be allowed on any barge or vessel containing fireworks.
- (j) Each such barge or vessel shall be equipped with at least two portable fire extinguishers as directed by the head of the fire department, the Marshal or their designees.
- (k) All barges and vessels shall be subject to assignment as to cargo loading and display locations by the head of the fire department.

The location for anchoring, or mooring, shall also be approved by the Harbormaster having jurisdiction.
- (l) It shall be the responsibility of the competent operator to insure:
  - 1. The display is in conformance with any U.S. Coast Guard standards or requirements and that adequate notice is given to any concerned parties such as local airports, private marinas, etc.
  - 2. That the area on all sides of the barge or vessel is free of all unauthorized personnel, vessels, and water craft. All such personnel and vessels shall be kept at a distance in accordance with NFPA 1123 Table 5.1.3.1.
- (m) All fireworks shall be set up and discharged in accordance with 527 CMR 2.00
- (n) All marine fireworks displays shall be fired using electrical ignition.

2.09: Theatrical Special Effects or Pyrotechnics Display Before a Proximate Audience

- (1) NFPA Standard No. 1126 (2006 Edition) Is Incorporated by Reference.
- (2) Massachusetts Requirements. 527 CMR 2.09(3) through (16) are requirements in addition to the incorporated standards.
- (3)(a) The use of pyrotechnic special effects outdoors shall be permitted provided 527 CMR 2.08 or 527 CMR 2.09 are complied with.
- (b) The use of pyrotechnic special effects indoors is prohibited in nightclubs, discotheques, dance halls, bars or similar occupancies.
- (c) The use of pyrotechnic special effects indoor in entertainment venues (defined as A-3 by 780 CMR) and theatres (defined as A-1 by 780 CMR) shall be permitted provided the facility is protected with automatic sprinklers to the extent required by law or regulation. Approval of the use of pyrotechnic special effects shall be subject to such terms and conditions as the head of the fire department may require.
- (4) Any person wishing to conduct a display of special effects fireworks shall first make an application for such supervised display as required by 527 CMR 2.04 and shall be further limited as follows:
  - (a) Every supervised display of "Special Effects" shall be handled by a person who possesses a valid certificate of competency to conduct special effects issued by the Marshal.

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## 2.09: continued

(b) The head of the fire department shall, forthwith, make a written report to the Marshal stating the details of any incident resulting in any injury to persons or property during an activity involving special effects.

(c) Application for a "special effects permit" for the supervised display of special effects shall be obtained from the head of the fire department. Application for such permit shall be submitted at least 20 days in advance of the date of the display and shall set forth:

1. The date, time, and location of the display.
2. The name, address, and certificate number of the competent operator.
3. The types, amounts, and description of the pyrotechnics to be used, accompanied by appropriate sketches or diagrams showing the exact location of each during the display.
4. The location, manner of storage, type of storage facility, and total amounts to be stored.
5. Evidence of a valid certificate of insurance for liability to the city or town, in an amount approved by the head of the fire department.

(d) The display shall be under the supervision of an individual competent operator holding a Certificate of Competency for Special Effects issued by the Marshal.

(5) The applicant for the special effects permit shall demonstrate the complete fireworks display in the presence of the head of the fire department or his designees at least four hours before the performance at the proposed location of the performance and shall give the head of the fire department at least four days' notice of such demonstration. The head of the fire department may waive the requirements of 527 CMR 2.09(5) if he or his designee has witnessed essentially the same display at a similar separate location.

(6) Denial of the Application. Denial of the application for the use of special effects fireworks for just cause shall be determined by the head of fire department within a maximum of 24 hours after witnessing the preliminary display, and the applicant shall be so notified in writing within the next 24 hours with the reasons for such denial detailed.

(7) Pyrotechnic Composition or Devices to be Used.

- (a) Only approved types and amounts of pyrotechnic compositions and devices as listed on the permit application shall be used.
- (b) Pyrotechnic compositions and devices shall be ignited and supervised continuously by the person holding the certificate of competency for the conducting of the display in question.

(8) Approved Pyrotechnic Compositions, Devices, Containers, and Detonating Mechanisms to be Used. Only those approved pyrotechnic compositions, devices, containers, and detonating devices listed in the application shall be used. All pyrotechnic devices and containers shall be fixed in their detonating positions as approved by the operator. Any device from which residue may be projected shall either be protected by a securely attached metallic screen or be relocated to a point where such residue will not endanger the audience.

(9) Detonating Mechanisms. The competent operator shall supervise the loading and wiring of each device and all firing shall be done from a central control location affording the operator an unobstructed view of each effect.

(10) Prohibited Special Effects Displays. No bombs, salutes, Roman candles, skyrockets, firecrackers, torpedoes, or similar fireworks shall be used in a special effects display unless previously specifically approved in writing by the Marshal.

(11) Audience Location. Audience location shall be in conformance with NFPA 1126

(12) Suspended Devices. The chemical composition of any suspended special effects shall be such as to self extinguishing at least ten feet above any object below. No such device shall be located above the audience.

Exception: Line or Grid rockets may be allowed with written approval of the head of the fire department provided that they are sturdily constructed and properly secured.

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(13) The theatre, auditorium, or similar facility shall certify that the proscenium wall and curtain are in compliance with 780 CMR and that all combustible materials used in sets and scenery have been rendered flame resistant in compliance with 780 CMR.

(14) The Marshal, the head of the fire department, or designee of either, may order the cancellation of any display for violation of any of 527 CMR 2.00.

(15) Storage. The storage of special effects fireworks shall be in accordance with NFPA 1126.

REGULATORY AUTHORITY

527 CMR 2.00: M.G.L. c. 148, §§ 9, 10, 28 and 39A.